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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,859	02/19/2004	Hironori Endo	Q79906	1971

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EXAMINER

HUFFMAN, JULIAN D

ART UNIT PAPER NUMBER

2853

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No. 10/780,859	Applicant(s) ENDO, HIRONORI	
	Examiner Julian D. Huffman	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/370,070.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/3/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 3, 8 and 11 are objected to because of the following informalities:

In claims 3 and 8 the language "in a main scanning direction" should be inserted after the language "a predetermined spacing therebetween".

In claim 11, lines 13 and 15, the term "scanning direction" is indefinite. It is not clear if the sub-scanning or main scanning direction is being referred to.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 7 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujimori (JP 2001-10088).

A machine translation of the Japanese document has been provided. However, the translation is difficult to comprehend. USPGPUB 2001/0030671 A1 is an English language equivalent of the Japanese document. Portions of the USPGPUB document are referred to in the body of this rejection to further clarify cited portions of the Japanese document.

With regards to claim 1, Fujimori discloses a printing apparatus comprising:

an ejection head for selectively ejecting ink droplets of a plurality of sizes to form dots on a printing medium (figs. 3 and 32);

wherein said printing apparatus prints a correction pattern including dots on said printing medium, said correction pattern enabling correction of a misalignment between a position at which dots are formed during a forward pass through which said head is moved and a position at which dots are formed during a return pass through which said head is moved (figs. 15 and 22), said correction pattern having two separate areas that are selected to make said correction (fig. 19, each sub-pattern has one selected area); and

a spacing in a sub-scanning direction between dots that make up said correction pattern printed by ejecting ink droplets of a certain size from said ejection head is different from a spacing in the sub-scanning direction between dots that make up said correction pattern printed by ejecting ink droplets of a different size from said ejection head (figs. 15 and 19, section 0073 of translation, section 0122 of USPGPUB).

As depicted in fig. 19 of Fujimori, a large number of sub-patterns are printed to correct the printer. The entirety of these sub-patterns constitute a correction pattern

which corrects the printer. Similarly applicant's invention prints a sub-pattern for medium dots, large dots and small dots and the entirety of these sub-patterns constitute a correction pattern which corrects the printer.

Fujimori also prints sub-patterns for each different drop size, for example, in a first sub-pattern the large black/K ink drops are printed in the forward pass and the large drops are printed in the return pass. In a second sub-pattern, medium drops are printed in the forward pass and medium dots are printed in the return pass. In a third sub-pattern, small drops are printed in the first pass and medium dots are printed in the return pass. These combinations are depicted in fig. 19 as the first combinations on the upper left numbered 1, 4 and 5.

Fujimori states that it is important for accuracy that the dots be in contact with one another when properly aligned, as shown in fig. 15 and described in section 0073 of the translation and section 0123 of the USPGPUB.

For each group of sub-patterns, a best aligned pattern is selected, thus for the entirety of the correction pattern, plural separate areas are selected to make the correction. Given two sub-patterns, two separate areas are selected, one for each sub-pattern (section 0073 of translation and 0123 of USPGPUB).

The claim language regarding the spacing in the sub-scanning direction specifically uses the language "between dots that make up said correction pattern". This language could refer to any two dots in the correction pattern, including any two dots in any of the sub-patterns.

The spacing in the sub-scanning direction between forward pass dots is equal to the diameter of the dots printed, as shown in fig. 15 and described in section 0123 of the USPGPUB. Since the spacing is equal to the dot diameter and the dot diameter changes as the dot size changes, Fujimori discloses different spacings in the sub-scanning direction for the different sizes of dots in the sub-patterns. For example, in the first sub-pattern discussed above, large sized drops are formed with a larger spacing between dots when compared with the second sub-pattern discussed above, which prints medium sized dots.

With regards to claim 2, Fujimori discloses that said correction pattern has a plurality of sub-patterns, and each sub-pattern is made of dots arranged in a main-scanning direction and the sub-scanning direction (fig. 15).

With regards to claim 3, each said sub-pattern has forward-pass dots that are formed with a predetermined spacing there-between during the forward pass through which said head is moved and return-pass dots that are formed with a predetermined spacing there-between during the return pass through which said head is moved, and an amount of misalignment between a position at which the forward-pass dots are formed and a position at which the return-pass dots are formed is different for each sub-pattern (fig. 15, fig. 22).

Claim 4 specifies that a spacing in a main-scanning direction between the dots forming said correction pattern is the same regardless of said size. This language can refer to any two dots in the pattern. It is further noted that claim 1 states that the correction pattern includes dots. In Fujimori, considering all of the dots in the pattern

shown in fig. 15, #4, the dots of each size, when properly aligned, are touching and therefore the spacing between the dots is 0 for the test patterns of various sizes.

With regards to claim 5, Fujimori discloses that said predetermined spacing is at least twice the spacing in the sub-scanning direction between the dots of said correction pattern. The term "the dots", as evident from claim 1 which recites "a correction pattern including dots", refers to any two dots of the correction pattern. Any two dots of the correction pattern may be selected, for example, in pattern 4 of fig. 15, selecting every other dot in the main scanning direction and selecting different consecutive dots in the sub-scanning direction provides the claim limitation.

With regards to claim 7, Fujimori discloses all of the claim limitations, as discussed above, and further discloses that said printing apparatus is capable of:

receiving command information from a user based on said correction pattern,
and;

based on the command information, correcting a misalignment between a position at which dots are formed during a forward pass through which said head is moved and a position at which dots are formed during return pass through which said head is moved (section 0073 of translation and 0123 of USPGPUB).

With regards to claim 9, Fujimori discloses the claimed correction pattern as discussed above.

With regards to claim 10, Fujimori discloses all of the claim limitations, as discussed above, and further discloses a computer main unit controlling operations (fig. 2, element 90 stores printer driver 96 and controls pattern printing).

With regards to claim 11, Fujimori discloses all of the claim limitations, as discussed above, and further discloses that a spacing in a scanning direction between dots that make up said correction pattern printed by ejecting ink droplets of said certain size from said ejection head is equal to a spacing in the scanning direction between dots that make up said correction pattern printed by ejecting ink droplets of said different size from said ejection head (fig. 15, the spacing between certain dots in the sub-patterns is 0 since they are adjoining).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori in view of Nishigori (JP 10-329381, cited by applicant).

With regards to claim 8, Fujimori discloses a printing apparatus comprising:
an ejection head for selectively ejecting ink droplets of a plurality of sizes to form dots on a printing medium (figs. 3 and 32);
wherein said printing apparatus prints a correction pattern including dots on

said printing medium, said correction pattern enabling correction of a misalignment between a position at which dots are formed during a forward pass through which said head is moved and a position at which dots are formed during a return pass through which said head is moved (figs. 15 and 22), said correction pattern having two separate areas that are selected to make said correction (fig. 19, each sub-pattern has one selected area); and

a spacing in a sub-scanning direction between dots that make up said correction pattern printed by ejecting ink droplets of a certain size from said ejection head is different from a spacing in the sub-scanning direction between dots that make up said correction pattern printed by ejecting ink droplets of a different size from said ejection head (figs. 15 and 19, section 0073 of translation, section 0122 of USPGUB);

said correction pattern has a plurality of sub-patterns (fig. 19);

each said sub-pattern is made of dots, which form the dots of said correction pattern, arranged in a main-scanning direction and the sub-scanning direction (fig. 15),

each said sub-pattern has forward-pass dots that are formed with a predetermined spacing therebetween during the forward pass through which said head is moved and return-pass dots that are formed with a predetermined spacing therebetween during the return pass through which said head is moved (figs. 15 and 22),

an amount of misalignment between the forward-pass dots and the return-pass dots is different for each sub-pattern (fig. 15);

a spacing in the main-scanning direction between the dots forming said correction pattern is the same regardless of said size (fig. 15, section 0073 of translation),

said predetermined spacing is at least twice the spacing in the sub-scanning direction between the dots that make up said correction pattern (The term "the dots", as evident from the recitation of "a correction pattern including dots", refers to any two dots of the correction pattern. Any two dots of the correction pattern may be selected, for example, selecting every other dot in the main scanning direction and selecting different consecutive dots in the sub-scanning direction provides the claim limitation);

the misalignment between a position at which the dots are formed during a forward pass through which said head is moved and a position at which the dots are formed during a return pass through which said head is moved is corrected.

Fujimori discloses everything claimed, as discussed above, with the exception of a density detection member detecting a density of the sub-patterns.

Nishigori discloses a density detection member for detecting test patterns (fig. 4, abstract, section 009 of translation provided by applicant).

It would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the density detection member of Nishigori in the invention of Fujimori. The reason for performing the incorporation would have been to provide an automatic adjustment which reduces a burden on a user.

Response to Arguments

6. Applicant's argument that Fujimori does not disclose two separate areas that are selected for correction is noted, however, Fujimori discloses a correction pattern consisting of a plurality of sub-patterns, each sub-pattern has a selected area, therefore, given x sub-patterns, there will be x selected areas.

Applicant's argument that Fujimori does not disclose a same spacing in the main-scanning direction between dots regardless of the dot size is noted, however, Fujimori discloses a consistent spacing of 0 between dots in the main scanning direction regardless of dot size; such an arrangement increases the accuracy of detection.

Applicant is reminded that during prosecution, examiners "are to give claims their broadest reasonable interpretation in light of the supporting disclosure". *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ 2d 1023, 1027-28 (Fed. Cir. 1997).

Further, "limitations appearing in the specification but not recited in the claim are not read into the claim". *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003): Claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969).

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Additionally,

"During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow.... The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.... An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.". In *re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

Applicant's amendment to claims 5 and 8 necessitated the new grounds of rejection. In the prior office action a 112 2nd paragraph rejection of claims 5 and 8 was made, wherein it was stated that it is not clear if the term dots refers to forward pass dots, reverse pass dots, or all of the dots of the test pattern. Applicant's amendment to claims 1, 5 and 8 has overcome this rejection and clarified, with the language "correction pattern including dots", that any two dots of the correction pattern satisfy the limitation "the dots". In the prior office action the examiner was not able to properly examine claims 5 and 8 and assumed that applicant was referring to all of the dots of the test pattern. The broad claim language renders the claims unpatentable over *Fujimori* and necessitated the new grounds of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. 6,523,926 B1 to Mitsuzawa et al. (fig. 37), U.S. 6,692,096 B1 to Otsuki et al. (figs. 23 and 26), U.S. 6,196,736 B1 to Otsuki et al. (figs. 23 and 26), U.S. 6,832,825 B1 to Nishikori et al. (fig. 33) and U.S. 6,464,321 to Nunokawa (fig. 20).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571) 272-2147. The examiner can normally be reached on 9:30a.m.-6:00p.m. Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JH
28 March 2005


K. FEGGINS
PRIMARY EXAMINER